

(19) World Intellectual Property Organization
International Bureau



15 OCT 2004



(43) International Publication Date
6 November 2003 (06.11.2003)

PCT

(10) International Publication Number
WO 03/092233 A1

(51) International Patent Classification⁷: **H04L 25/03**

(21) International Application Number: **PCT/US02/12806**

(22) International Filing Date: **23 April 2002 (23.04.2002)**

(25) Filing Language: **English**

(26) Publication Language: **English**

(71) Applicant (for all designated States except US):
**RAYTHEON COMPANY [US/US]; 141 Spring Street,
Lexington, MA 02421 (US).**

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WASHAKOWSKI,
Steven [US/US]; 45 Jefferson Road, Franklin, MA 02038
(US). BRODSKY, Wesley, G. [US/US]; 247 High Street,
Medford, MA 02155 (US).**

(74) Agents: **GAIMAN, Barry et al.; Daly, Crowley & Mof-
ford, LLP, Suite 101, 275 Turnpike Street, Canton, MA
02021 (US).**

(81) Designated States (national): **AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,**

**CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,
SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VN, YU, ZA, ZM, ZW.**

(84) Designated States (regional): **ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR,
GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent
(BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR,
NE, SN, TD, TG).**

Declarations under Rule 4.17:

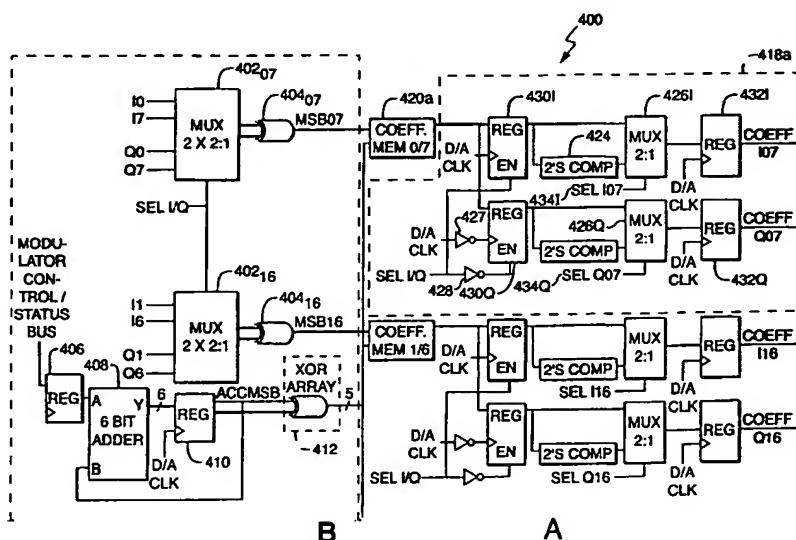
- as to the identity of the inventor (Rule 4.17(i)) for all designations
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **METHOD AND DEVICE FOR PULSE SHAPING QPSK SIGNALS**



(57) Abstract: A baseband shaping device includes a plurality of coefficient memories, each memory having an input address bus, a multiplexor input and a coefficient value output. The device further includes a plurality shift registers, each having an input coupled to a respective one of the coefficient value outputs, a digital to analog clock input and an output. The device further includes a plurality of negative value circuits, each circuit having an input coupled to a respective one of the first shift register outputs and an output, a plurality of multiplexors, each having a first input coupled to a respective one of the first shift register outputs and a second input coupled to a respective one of the output of the plurality of negative value circuits. The device further includes a plurality of second shift registers, and an adder having a plurality of inputs coupled to the plurality of second shift registers.